REMARKS

I. Interview Summary/Overview

The Examiner is thanked for the courtesies extended to the Applicant's Attorney in the teleconference that was held on 26 January 2006. In that conference, the Examiner and the Applicant's Attorney discussed the proposed claims that were forwarded to the Examiner by facsimile on 24 January 2006. Additionally, the Applicant's Attorney and the Examiner discussed the two references cited by the Examiner in the Official Action, namely Huntzinger, U.S. Patent No. 4,660,893, and Drews, U.S. Patent No. 4,284,302.

No agreement was reached regarding the claims, as the Examiner wished to spend time further reviewing the references, and in particular, the Drews reference. The Examiner requested that the Applicant submit the proposed claims as a Response to the Official Action, along with arguments similar to those made in the telephone conference.

In this Response, the Applicant's Attorney has attempted to comply with the Examiner's request.

II. The Rejection of the Claims

In the Official Action of 7 September 2005, the Examiner rejected Claims 1-15 and 16-18 under Section 103 as being unpatentable over Huntzinger in view of Drews. Additionally, the Examiner rejected Claims 19-23 under Section 103 (a) as being unpatentable over Huntzinger in view of Drews, and further in view of Blood.

III. The Art of Record

Huntzinger, U.S. Patent No. 4,660,893 relates to a wheel cover for a spoked wheel. Huntzinger's wheel consists of a standard wheel having a plurality of spokes. It is believed that Huntzinger's wheel comprises a steel or other metal wheel, as Huntzinger states that a solid wheels weigh approximately 4 pounds.[1] The weight of these wheels is significant, as it suggests strongly that Huntzinger never contemplated the use of carbon fiber wheels, as the Applicant's carbon fiber solid wheels typically weigh between 700 and 965 grams, or basically, something less than one-half the weight of the wheel described by Huntzinger

To improve the aerodynamic properties of the wheel, Huntzinger attaches a cover 20 of flexible material over the spokes of the wheel. Huntzinger's cover 20 is described as being "a sheet of flexible material such as polyester film. Flat DuPont Mylar of approximately 0.010 inches in thickness has been found to be particularly suitable".

Thus, in essence, Huntzinger teaches a use of a steel or other metal spoke wheel having a Mylar film covering.

Nothing in Huntzinger discloses or suggests providing a plurality of surface features designed to create a turbulent boundary layer when the wheel travels through air to reduce aerodynamic drag, as recited in Applicant's Claims 1, 4, 21 and 22.

Drews, U.S. Patent No. 4,284,302 is directed to a driven craft having surface means for increasing propulsion efficiencies. In particular, Drews shows an automobile that is formed with a series of immediately adjacent or closely spaced wave-shaped flutes that extend longitudinally at an angle to the direction of travel and form a herring-bone pattern.

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[1] See Huntzinger at Col. 1, ll 30-34.

The Examiner has cited Drews for the proposition that Drews shows a wheel 2 having air-engaging side surfaces that are provided with a plurality of surface features, in the form of protrusions.

The Applicant believes, that this is not the case. Rather, although Drews does state that "wheel tires 11 may be similarly formed of a divided fluted surfaces as here and after described to enhance the effects of environmental air conditions"..., and further states that "fluted members 12 may be located to the front and back of the tires 11 to further minimize tire drag normally encountered," nowhere in Drews does he disclose or suggest that the *wheels* may be provided with surface features.[2]

Drews goes on to further explain, at Col 5, lines 12 et seq. that "in the illustrated embodiment of the invention, the tires 11 may be advantageously formed with similarly treated side walls. The tires, that are formed of molded rubber, may be constructed with the desired configuration integrally molded into the side walls as shown for example, in Figs. 5 and 6".[3] Interestingly, Drews hub caps (or wheels 2) appear, from Figs. 1, 5 and 6 to be devoid of any surface features.

It should also be noted that Drews describes the features on his *tire* as "a plurality of radially directed flutes 21, that extend substantially radially of the wheel axle"... [which flutes are] again divided by a plurality of closely spaced angular dividing walls 22...".

In summary, Drews does not disclose providing a car wheel, much less a human powered vehicle wheel, such as a bicycle wheel, with a series of surface features. Additionally, the

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[2] Drews, U.S. Patent No. 4,284,302 at ll 47-52.

[3] Drews, U.S. Patent No. 4,282,302 at Col 5, ll 14-17.

surface features disclosed by Drews are very different than the surface features, and is claimed by the Applicant in Claims 22 and 23.

Blood, U.S. Patent No. 5,378,524 relates to an improved aerodynamic surface for the exterior of vehicles. In particular, Blood discloses placing a matrix of dimples or depressions on the body portions, such as the fender, fuselage, roof and hull of a vehicle such as an airplane, automobile and/or boat. Blood does not disclose or suggest anywhere using this friction reducing surfaces on the wheels of an automobile, boat or airplane. Nor does Blood disclose that such features could be provided on a human powered vehicle, such as a bicycle or wheelchair, much less a wheel for such a human powered vehicle. It will be further appreciated that distinctly different aerodynamic properties exist between the manner in which a bicycle wheel passes through the air, and the manner in which, for example, an automobile fender passes through the air, because a human powered vehicle wheel spins while passing through the air, whereas a fender or boat hull does not.

IV. The Applicant's Invention and the Art of Record

Independent Claims 1 and 4 both recite that the Applicant's invention comprises human powered vehicle wheel ... wherein ... first and second air engaging side surfaces contain a plurality of surface features designed to create a turbulent boundary layer when the wheel travels through air to reduce aerodynamic drag. Independent Claim 21 elaborates on this feature by reciting the presence of a human powered vehicle wheel having "first and second air engaging side surfaces [that] contain a plurality of surface features designed such that when said wheel moves through a body of air, the boundary layers separate from said first and second air engaging

side surfaces closer to the trailing edge of the wheel then the boundary layer would separate from a wheel without surface features.

Independent Claim 22 recites that the first and second air engaging side surfaces contain a "plurality of surface features having closed plain figure profiles designed to create a turbulent boundary layer when the wheel travels through air to reduce aerodynamic drag".

None of the art of record discloses or suggests this, either singly or combined, for none of the art of record discloses or suggests providing such surfaces on a wheel, much less a wheel for a human powered vehicle. Although Huntzinger shows a feature-less bicycle wheel, Drews does not relate to either a human powered vehicle, and, for the reasons discussed above, does not even necessarily disclose a wheel with surface features. Rather, Drews discloses a tire having a plurality of flutes.

Claim 2 has been amended to recite more clearly that a human powered vehicle wheel comprises at least one of a bicycle wheel and a wheel chair wheel, to further help differentiate the Applicant's invention from the Drews and Blood references, neither of which relates to bicycles or any other human powered vehicle.

Claim 4 also includes a limitation that the wheel includes a washer-shaped brake engaging portion adjacent the tire engaging portion. The automobile wheel of Drews does not include such a washer-shaped brake engaging portion being adjacent to the tire engaging portion. Rather, the brakes of an automobile are usually separated from the wheel, and are usually disposed toward the hub of the wheel, so that the brakes, may be adjacent to the central portion of the wheel, but not the tire engaging portion of the wheel.

The Applicant has also amended Claim 6, to recite that the wheel comprises a wheel

composed at least partially of a carbon fiber material. For the reasons set forth above it is believed that the Huntzinger wheel comprises a metal wheel, for the weight stated for the wheel of Huntzinger is much greater than the weight of a carbon fiber-type wheel. None of the references disclosed by the Examiner relate in any way to devices having fiber carbon wheels. As such, they cannot be combined to render obvious the Applicant's invention recited in Claim 6.

The Examiner's attention is now directed to Claim 20, that recites that the plurality of surface features are circular depressions. As discussed, Huntzinger discloses no such surface features, and the surface features disclosed by Drews comprise flutes. Blood on the other hand, is not necessarily that relevant, as Blood does not disclose the use of any such circular depressions on any type of wheel or other object that rotates as it passes through the air.

Claim 22 recites that the surface features comprise closed plane figures. These closed plane figures are not disclosed or suggested by any of Huntzinger, or by Drews' flutes, nor is there use on the wheel disclosed or suggested by Blood.

Claims 23 and 24 add to Claim 22 by reciting that the surface features are circular shaped depressions (Claim 23), and that they are polygonally shaped depressions (Claim 24).

V. Conclusion

For the reasons set forth above, the Applicants believe that their claims patentably distinguish the Applicants' invention from art of record. Re-examination and re-consideration, culminating in allowance of all claims in the application is therefor respectfully requested. If the Examiner has any questions relating to the instant application, he is respectfully requested to

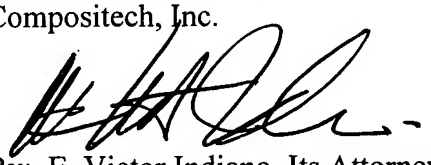
contact the Applicants' attorney, E. Victor Indiano at (317) 822-0033; or by e-mail at Vic@IPLawIndiana.com.

Extension of Time

Applicants believe that an extension of time for two (2) months is required for this response, and Applicants hereby request an Extension of Time for this time period or whatever time period is appropriate. **E. Victor Indiano's Deposit Account 50-1950** may be charged if the appropriate amount is not attached herewith

Applicant requests that any required fees needed beyond those submitted with this Response be charged, or any overpayments be credited to the Deposit Account of E. Victor Indiano, **Deposit Account Number 50-1590**.

Respectfully submitted,
Compositech, Inc.



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32 - Response to official action of 07 September 2005.wpd